

Source: TSG CN WG3
Title: CRs on Rel-4 and earlier Work Item CSSPLIT.
Agenda item: 7.8
Document for: APPROVAL

Introduction:

This document contains **4 CRs on Rel-4 and earlier Work Item CSSPLIT**, including the corresponding mirror CRs (as required).

These CRs have been agreed by TSG CN WG3 and are forwarded to TSG CN Plenary meeting for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N3-030639	Clarification of Handover description	23.910	046	1	F	Rel-4	4.7.0
N3-030640	Clarification of Handover description	23.910	047	1	A	Rel-5	5.3.0
N3-030637	Clarification of Handover description	29.007	083	2	F	Rel-4	4.8.0
N3-030638	Clarification of Handover description	29.007	084	2	A	Rel-5	5.6.0

3GPP TSG CN WG3 Meeting #29
Sophia Antipolis, France, 25-29 Aug

Tdoc # N3-030637

CR-Form-v7
CHANGE REQUEST
29.007 CR 083 # rev 2 # Current version: 4.8.0

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	#	Clarification of Handover description
Source:	#	TSG_CN WG3 [Huawei Technologies Co., Ltd., Siemens]
Work item code:	#	CSSPLIT
		Date: # 27/07/2003
Category:	#	F
		Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .
		Release: # Rel-4 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	#	TS 29.007, section 11.3 contradicts TS 29.007, section 11.5.1.1 and TR 23.910, section 6.1 with respect to the handling of non-transparent CS data services at the Nb interface after inter-MSC relocation at the access side of the IWF. As a transit MSC is not capable of discriminating between transparent and non-transparent CS data calls, and not able to determine at which side of the IWF it is located, the same PDU size and transmission intervall shall always be used, as described in Section 11.3 of TS 29.007.
Summary of change:	#	Section 11.5.1.1 is not applicable for inter MSC relocation
Consequences if not approved:	#	Interworking problems –the handover could not be realized.

Clauses affected:	#	11.3, 11.5.1, 11.5.3								
Other specs affected:	#	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"></td> </tr> <tr> <td style="width: 20px;"></td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"></td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications # TR 23.910 Test specifications O&M Specifications	Y	N	X			X		X
Y	N									
X										
	X									
	X									
Other comments:	#									

11.3 Handover within 3G PLMNs

After a handover from a 3G MSC to another 3G MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to:

- the A-TRAU' protocol if both MSCs are connected via a TDM interface except for the transparent case FNUR = 32 kbit/s (ITC = UDI or RDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64 kbit/s and 32 kbit/s is based on ITU-T Recommendation I.460 [2].
- the Nb UP protocol if the anchor MSC or MGW and the visited MSC or MGW are connected via an ATM interface or IP interface. The NbUP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T Recommendation I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GUP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbits/s). [Furthermore, Clause 11.5.3 is applicable.](#)

11.4 Handover for 56kbit/s

The FNUR = 56 kbit/s in transparent mode can be supported in GSM by two configurations:

1. without IWF with the following channel codings
 - 2*TCH/F32.0
 - 5*TCH/F9.6
2. with IWF with the following channel coding
 - 4*TCH/F14.4

The FNUR = 56 kbit/s in transparent mode is supported in UMTS by a configuration without IWF only. Therefore handover for 56kbit/s in transparent mode between UMTS and GSM can be supported only for configurations without IWF.

Note: Handover between configurations with and without IWF are also not supported within GSM.

11.5 Transport within the Core Network

The Nb UP protocol is used to transport user data in the Core Network, see 3GPP TS 29.415 [80]. Figure 16 below shows different cases to consider:

1. Transport on the access side of the IWF
2. Transport beyond the IWF, i.e., between the IWF and the fixed network

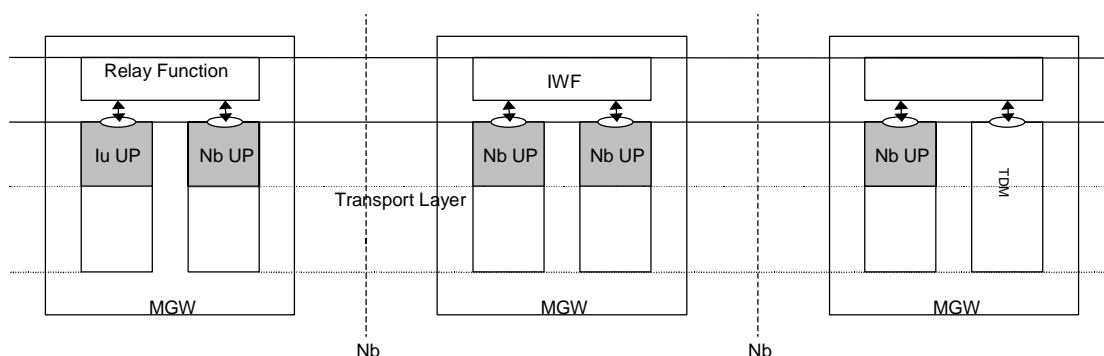


Figure 16: Transport of data within the Core Network

11.5.1 Transport on the access side of the IWF

In case of an inter-MSC relocation, Clauses 11.3 and 11.5.3 are applicable.

The following subclauses in this section are only applicable in other cases where the IWF is not interfacing an Iu UP layer protocol entity, e.g. due to an Inter-MSC Relocation—see also 11.5.3. For example, an MSC-server may control two MGWs and route the call through both, as one MGW interfaces Iu and the other one hosts the user plane part of the IWF.

11.5.1.1 Non-transparent case

The Nb UP is used in support mode. The same SDU sizes and transmission intervals that are used on the Iu interface are used over the Nb interface, see 3GPP TR 23.910 [53] and 3GPP TS 27.001 [43]. A Relay Function (see 3GPP TS 29.232 [82]) is used to relay the user data and control information (such as rate control) in MGWs between the MGW where the IWF is residing and the Iu interface.

11.5.1.2 Transparent case

The Nb UP is used in support mode.

11.5.2 Transport beyond the IWF

11.5.2.1 UDI and RDI

The data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T Recommendation I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied.

At the border between the CN and the fixed (ISDN) network, conversion between Nb UP and TDM shall be applied. In case of RDI interworking, the 56 kbit/s RDI bit stream is transmitted within the CN as 64 kbit/s bit stream where the last bit of each octet is ignored. For this reason the octet alignment shall be preserved in the SDUs transported in the CN.

11.5.2.2 Modem

The modem signals are PCM encoded and transported on a 64 kbit/s bit stream. The transmission is otherwise identical to the UDI/RDI case, see Section 11.5.2.1

11.5.3 Transport on the access side of the IWF after inter-MSC relocation ~~Transport between Anchor MGW and Non-Anchor MGW~~

Clause 11.3 is applicable. Furthermore, if the Nb UP is used in support mode; all interim Server nodes are assumed not to be aware of the relocation case – i.e. receive BICC IAM with same information as for connections beyond the IWF (clause 11.5.2). Figure 17 indicates the relevant connections, where MSC-A/MGW-A are the Anchor nodes and MSC-B/MGW-B are the Non-Anchor nodes.

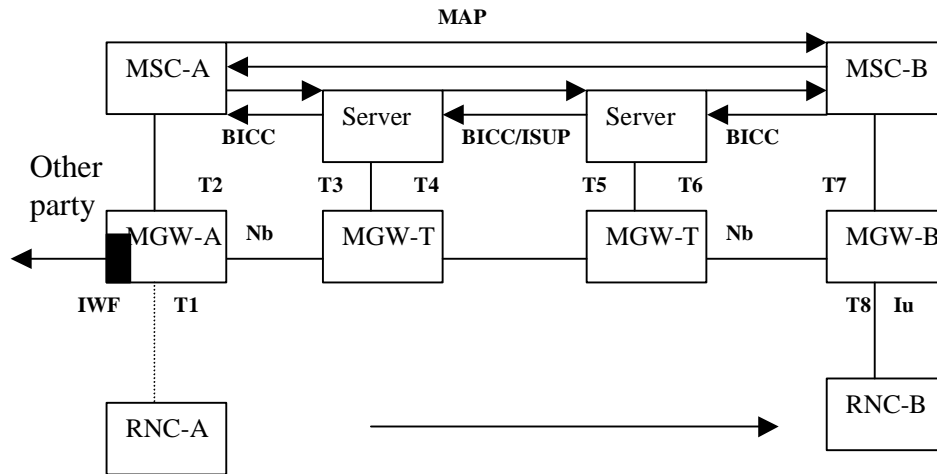


Figure 17: Bearer Independent connections for Inter-MSC SRNS Relocation

The IuUP shall be initialised on each Nb leg in a forward direction (regardless if Forward Bearer or Backward Bearer procedures are used), i.e. in the direction of the IAM. For further details see TS 23.205 [83]

11.5.3.1 Non-Transparent CSD

Table 14: Non-Transparent CSD MGW Termination Properties For Inter-MSC SRNS Relocation

Termination Packages/Parameters	MSC-A		MSC-B		Intermediate Nodes
	T1	T2	T7	T8	T3, T4, T5, T6
TMR	-	-	UDI	-	UDI
threegcsd:plmnbc	PLMN_BC	PLMN_BC	-	-	-
threegup:interface	RAN	CN	CN	RAN	CN
threegup:initdir	IN	OUT	IN	OUT	IN
threegup:mode	support	support	support	support	support
threegcsde:bitrate	-	-	-	BITRATE	-

11.5.3.2 Transparent CSD

Table 15: Transparent CSD MGW Termination Properties For Inter-MSC SRNS Relocation

Termination Packages/Parameters	MSC-A		MSC-B		Intermediate Nodes
	T1	T2	T7	T8	T3, T4, T5, T6
TMR	-	UDI	UDI	-	UDI
threegcsd:plmnb	-	-	-	-	-
threegup:interface	RAN	CN	CN	RAN	CN
threegup:mode	transparent	support	support	transparent	support
threegup:initdir	-	OUT	IN	-	IN
threegcsden:bitrate	-	-	-	BITRATE (note 1)	-

Note 1: This is optional for the case when rate is 64kb/s then no rate adaptation is required.

CHANGE REQUEST

29.007 CR 084 # rev **2** # Current version: **5.6.0**

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Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Clarification of Handover description		
Source:	# TSG_CN WG3 [Huawei Technologies Co., Ltd., Siemens]		
Work item code:	# CSSPLIT	Date:	# 27/07/2003
Category:	# A	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change: # TS 29.007, section 11.4 contradicts TS 29.007, section 11.6.1.1 and TR 23.910, section 6.1 with respect to the handling of non-transparent CS data services at the Nb interface after inter-MSC relocation at the access side of the IWF. As a transit MSC is not capable of discriminating between transparent and non-transparent CS data calls, and not able to determine at which side of the IWF it is located, the same PDU size and transmission interval shall always be used, as described in Section 11.4 of TS 29.007.

Summary of change: # Section 11.6.1.1 is not applicable for inter MSC relocation

Consequences if not approved: # Interworking problems –the handover could not be realized.

Clauses affected: # 11.4, 11.6.1, 11.6.3

Other specs affected:	#	<table border="1" style="display: inline-table;"><tr><td>Y</td><td>N</td></tr></table>	Y	N	Other core specifications	# TR 23.910
	Y	N				
		<table border="1" style="display: inline-table;"><tr><td>X</td><td></td></tr></table>	X		Test specifications	
X						
	<table border="1" style="display: inline-table;"><tr><td></td><td>X</td></tr></table>		X	O&M Specifications		
	X					

Other comments: #

11.4 Handover within Iu mode PLMNs

After a handover from an Iu mode MSC to a UTRAN Iu mode MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to:

- the A-TRAU' protocol if both MSCs are connected via a TDM interface except for the transparent case FNUR = 32 kbit/s (ITC = UDI or RDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64 kbit/s and 32 kbit/s is based on ITU-T Recommendation I.460 [2].
- the Nb UP protocol if the anchor MSC or MGW and the visited MSC or MGW are connected via an ATM interface or IP interface. The NbUP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T Recommendation I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GPP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbit/s). [Furthermore, Clause 11.6.3 is applicable.](#)

After a handover from an Iu mode MSC to a GERAN Iu mode MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to

- the A-TRAU' and A-TRAU'' protocol if both MSC are connected via a TDM interface except for the transparent cases FNUR = 32 kbit/s (ITC = UDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64kbit/s and 32kbit/s is based on ITU-T Recommendation I.460.
- the Nb UP protocol if the anchor MSC or MGW and the visited MSC or MGW are connected via an ATM interface or IP interface. The NbUP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T Recommendation I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GPP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbit/s). [Furthermore, Clause 11.6.3 is applicable.](#)

11.5 Handover for 56kbit/s

The FNUR = 56 kbit/s in transparent mode can be supported in A/Gb mode by two configurations:

1. without IWF with the following channel codings
 - 2*TCH/F32.0
 - 5*TCH/F9.6
2. with IWF with the following channel coding
 - 4*TCH/F14.4

The FNUR = 56 kbit/s in transparent mode is supported in Iu mode by a configuration without IWF only. Therefore handover for 56kbit/s in transparent mode between Iu mode MSC and A/Gb mode can be supported only for configurations without IWF.

Note: Handover between configurations with and without IWF are also not supported within A/Gb mode.

11.6 Transport within the Core Network

The Nb UP protocol is used to transport user data in the Core Network, see 3GPP TS 29.415 [80]. Figure 16 below shows different cases to consider:

1. Transport on the access side of the IWF
2. Transport beyond the IWF, i.e., between the IWF and the fixed network

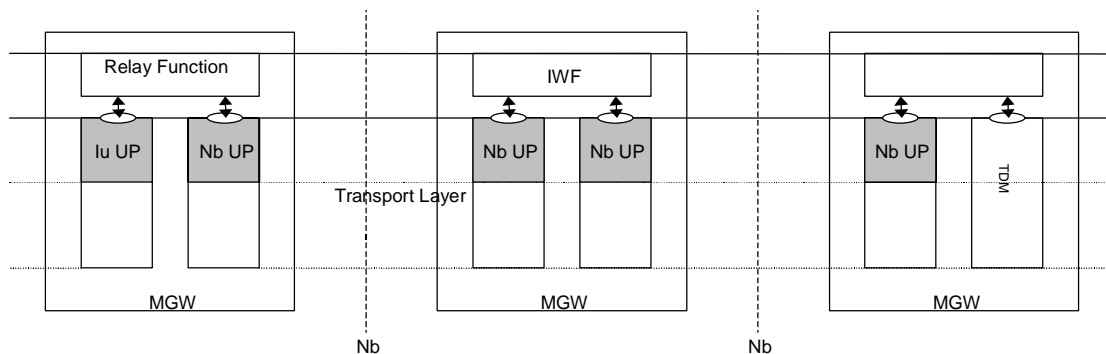


Figure 16: Transport of data within the Core Network

11.6.1 Transport on the access side of the IWF

[In case of an inter-MSC relocation, Clauses 11.4 and 11.6.3 are applicable.](#)

~~The following subclauses in this section are only applicable in other cases where the IWF is not interfacing an Iu UP layer protocol entity, e.g. due to an Inter-MSC Relocation—see also 11.6.3.~~ For example, an MSC-server may control two MGWs and route the call through both, as one MGW interfaces Iu and the other one hosts the user plane part of the IWF.

11.6.1.1 Non-transparent case

The Nb UP is used in support mode. The same SDU sizes and transmission intervals that are used on the Iu interface are used over the Nb interface, see 3GPP TR 23.910 [53] and 3GPP TS 27.001 [43]. A Relay Function (see 3GPP TS 29.232 [82]) is used to relay the user data and control information (such as rate control) in MGWs between the MGW where the IWF is residing and the Iu interface.

11.6.1.2 Transparent case

The Nb UP is used in support mode.

11.6.2 Transport beyond the IWF

11.6.2.1 UDI and RDI

The data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T Recommendation I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied.

At the border between the CN and the fixed (ISDN) network, conversion between Nb UP and TDM shall be applied. In case of RDI interworking, the 56 kbit/s RDI bit stream is transmitted within the CN as 64 kbit/s bit stream where the last bit of each octet is ignored. For this reason the octet alignment shall be preserved in the SDUs transported in the CN.

11.6.2.2 Modem

The modem signals are PCM encoded and transported on a 64 kbit/s bit stream. The transmission is otherwise identical to the UDI/RDI case, see Section 11.6.2.1

11.6.3 Transport on the access side of the IWF after inter-MSC relocation
~~Transport between Anchor MGW and Non-Anchor MGW~~

Clause 11.4 is applicable. Furthermore, if the Nb UP is used in support mode; all interim Server nodes are assumed not to be aware of the relocation case – i.e. receive BICC IAM with same information as for connections beyond the IWF (clause 11.6.2). Figure 17 indicates the relevant connections, where MSC-A/MGW-A are the Anchor nodes and MSC-B/MGW-B are the Non-Anchor nodes.

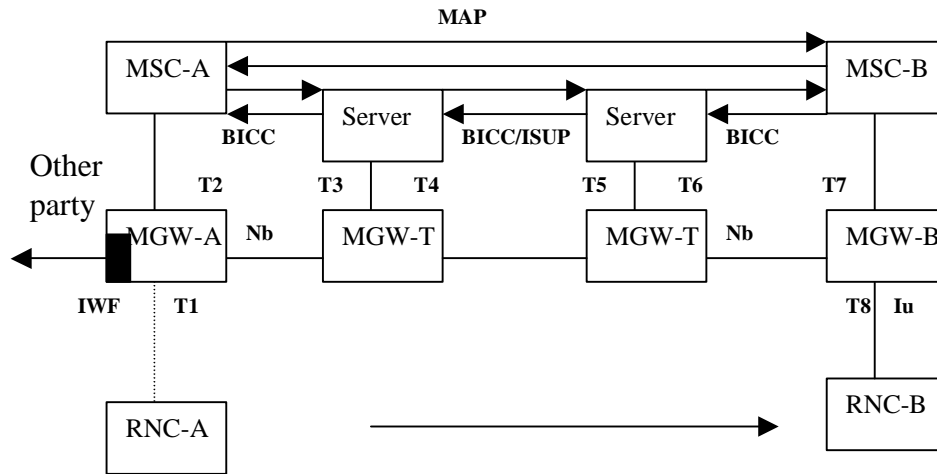


Figure 17: Bearer Independent connections for Inter-MSC SRNS Relocation

The IuUP shall be initialised on each Nb leg in a forward direction (regardless if Forward Bearer or Backward Bearer procedures are used), i.e. in the direction of the IAM. For further details see TS 23.205 [83]

11.6.3.1 Non-Transparent CSD

Table 14: Non-Transparent CSD MGW Termination Properties For Inter-MSR SRNS Relocation

Termination Packages/Parameters	MSC-A		MSC-B		Intermediate Nodes
	T1	T2	T7	T8	T3, T4, T5, T6
TMR	-		UDI	-	UDI
threegcsd:plmnb	PLMN_BC	PLMN_BC	-	-	-
threegup:interface	RAN	CN	CN	RAN	CN
threegup:initdir	IN	OUT	IN	OUT	IN
threegup:mode	support	support	support	support	support
threegcsde:bitrate	-	-	-	BITRATE	-

11.6.3.2 Transparent CSD

Table 15: Transparent CSD MGW Termination Properties For Inter-MSR SRNS Relocation

Termination Packages/Parameters	MSC-A		MSC-B		Intermediate Nodes
	T1	T2	T7	T8	T3, T4, T5, T6
TMR	-	UDI	UDI	-	UDI
threegcsd:plmnb	-	-	-	-	-
threegup:interface	RAN	CN	CN	RAN	CN
threegup:mode	transparent	support	support	transparent	support
threegup:initdir	-	OUT	IN	-	IN
threegcsden:bitrate	-	-	-	BITRATE (note1 1)	-

Note 1: This is optional for the case when rate is 64kb/s then no rate adaptation is required.

3GPP TSG CN WG3 Meeting #29
Sophia Antipolis, France, 25-29 Aug

Tdoc # N3-030639

CR-Form-v7
CHANGE REQUEST
23.910 CR 046 # rev 1 # Current version: 4.7.0

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	#	Clarification of Handover description	
Source:	#	TSG_CN WG3 [Siemens]	
Work item code:	#	CSSPLIT	Date: # 27/07/2003
Category:	#	F	Release: # Rel-4
		Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
		F (correction)	2 (GSM Phase 2)
		A (corresponds to a correction in an earlier release)	R96 (Release 1996)
		B (addition of feature),	R97 (Release 1997)
		C (functional modification of feature)	R98 (Release 1998)
		D (editorial modification)	R99 (Release 1999)
		Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	#	TS 29.007, section 11.3 contradicts TS 29.007, section 11.5.1.1 and TR 23.910, section 6.1 with respect to the handling of non-transparent CS data services at the Nb interface after inter-MSC relocation at the access side of the IWF. As a transit MSC is not capable of discriminating between transparent and non-transparent CS data calls, and not able to determine at which side of the IWF it is located, the same PDU size and transmission interval shall always be used, as described in Section 11.3 of TS 29.007.
Summary of change:	#	non-transparent CS data services at the Nb interface after inter-MSC relocation at the access side of the IWF shall be transported using a SDU size is 320 bits, transmitted every 5 ms. PDU type 0 is used. The data within the PDUs is encoded as a A-TRAU' frames
Consequences if not approved:	#	Interworking problems –the handover could not be realized.

Clauses affected:	#	6.1								
Other specs affected:	#	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications # TS 29.007 Test specifications O&M Specifications	Y	N	X			X		X
Y	N									
X										
	X									
	X									
Other comments:	#									

6.1 NT services

On the Iu interface and if TDM is not used on the Nb interfaces between the access network and the IWF this paragraph is applicable, except for the Nb interface in the case of inter-MSC relocation. The Iu and Nb user planes are used in support mode, see 3GPP TS 25.415 [13] and 3GPP TS 29.415 [22]. Each SDU corresponds to one RLP frame and, consequently, is 576 bits long. Each SDU is transported in one Iu or Nb UP PDU of Type 1. The range of AIUR values is 14,4 kbit/s, 28,8 kbit/s, 57,6 kbit/s, limited by the maximum bit rate, and varies with the transmission period on the Uu interface, which is 10 ms, 20 ms or 40 ms. A change in the transmission period is signalled to the IWF through the Iu and Nb UP protocols. The Iu or Nb UP primitive Iu- or Nb-UP-DATA-REQUEST is invoked each time an RLP frame is ready to be sent from the IWF towards the UE. DTX indication is not used.

For Inter-MSC relocation this paragraph is applicable for the Nb interface between the access network and the IWF. The Nb UP protocol is applied in support mode and the SDU size is 320 bits, transmitted every 5 ms. PDU type 0 is used. The data within the PDU is encoded as A-TRAU' frames.

If TDM is not used, then between the IWF and the fixed network (ISDN or PSTN), the Nb UP protocol is applied in support mode and the SDU size is 320 bits, transmitted every 5 ms. PDU type 0 is used.

CHANGE REQUEST

23.910 CR 047 # rev **1** # Current version: **5.3.0**

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Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Clarification of Handover description		
Source:	# TSG_CN WG3 [Siemens]		
Work item code:	# CSSPLIT	Date:	# 27/07/2003
Category:	# A	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# TS 29.007, section 11.4 contradicts TS 29.007, section 11.6.1.1 and TR 23.910, section 6.1 with respect to the handling of non-transparent CS data services at the Nb interface after inter-MSC relocation at the access side of the IWF. As a transit MSC is not capable of discriminating between transparent and non-transparent CS data calls, and not able to determine at which side of the IWF it is located, the same PDU size and transmission interval shall always be used, as described in Section 11.4 of TS 29.007.
Summary of change:	# Non-transparent CS data services at the Nb interface after inter-MSC relocation at the access side of the IWF shall be transported using a SDU size is 320 bits, transmitted every 5 ms. PDU type 0 is used. The data within the PDUs is encoded as a A-TRAU' frames
Consequences if not approved:	# Interworking problems –the handover could not be realized.

Clauses affected:	# 6								
Other specs affected:	<table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">Y</td> <td style="border: 1px solid black; padding: 2px;">N</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">X</td> <td style="border: 1px solid black; padding: 2px;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;"></td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;"></td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> </table> Other core specifications # TR 29.207 Test specifications O&M Specifications	Y	N	X			X		X
Y	N								
X									
	X								
	X								
Other comments:	#								

6.1 NT services

On the Iu interface and [if TDM is not used](#) on the Nb interfaces between the access network and the IWF, [this paragraph is applicable, except for the Nb interface in the case of inter-MSC relocation.](#) The Iu and Nb user planes are used in support mode, see 3GPP TS 25.415 [13] and 3GPP TS 29.415 [24]. Each SDU corresponds to one RLP frame and, consequently, is 576 bits long. In GERAN Iu mode another SDU size of 480 bits is possible. It carries two RLP frames of 240 bits and is used if TCH/F9.6 is used in GERAN. Each SDU is transported in one Iu or Nb UP PDU of Type 1. In UTRAN Iu mode, the range of RAB Subflow Combination bit rate values is 14,4 kbit/s, 28,8 kbit/s, 57,6 kbit/s, limited by the maximum bit rate, and varies with the transmission period on the Uu interface, which is 40 ms, 20 ms or 10 ms. In GERAN Iu mode these values are valid if TCH/F14.4, TCH/28.8 or TCH/F43.2 is used. In addition GERAN Iu mode has a RAB Subflow Combination bit rate of 43,2 kbit/s with a transmission period of 13½ ms. If TCH/F9.6 is used, the range of RAB Subflow Combination bit rate values is 12 kbit/s, 24 kbit/s, 36 kbit/s, 48 kbit/s, limited by the maximum bit rate, and varies with the transmission period on the Um interface, which is 40 ms, 20 ms, 13½ ms or 10 ms. A change in the transmission period is signalled to the IWF through the Iu and Nb UP protocols. The Iu or Nb UP primitive Iu- or Nb-UP-DATA-REQUEST is invoked each time an RLP frame is ready to be sent from the IWF towards the UE. DTX indication is not used.

The following table shows the connection between the RAB subflow combination bit rate and the AIUR.

RAB subflow combination bit rate	AIUR	Used number of traffic channels and channel coding for GERAN Iu mode	Comment
57,6 kbit/s	57,6 kbit/s	4xTCH/F14.4, 2xTCH/F28.2	(Note 1)
43,2 kbit/s	43,2 kbit/s	3xTCH/F14.4, 1xTCH/F43.2	(Note 2)
48 kbit/s	38,4 kbit/s	4xTCH/F9.6	(Note 2)
36 kbit/s	28,8 kbit/s	3xTCH/F9.6	(Note 2)
28,8 kbit/s	28,8 kbit/s	2xTCH/F14.4, 1xTCH/F28.2	(Note 1)
24 kbit/s	19,2 kbit/s	2xTCH/F9.6	(Note 2)
14,4 kbit/s	14,4 kbit/s	1xTCH/F14.4	(Note 1)
12 kbit/s	9,6 kbit/s	1xTCH/F9.6	(Note 2)
NOTE 1: RAB subflow combination bit rate is used in UTRAN Iu mode and GERAN Iu mode			
NOTE 2: RAB subflow combination bit rate is only used in GERAN Iu mode			

[For Inter-MSC relocation this paragraph is applicable for the Nb interface between the access network and the IWF. The Nb UP protocol is applied in support mode and the SDU size is 320 bits, transmitted every 5 ms. PDU type 0 is used. The data within the PDU is encoded as A-TRAU' frames.](#)

If TDM is not used, then between the IWF and the fixed network (ISDN or PSTN), the Nb UP protocol is applied in support mode and the SDU size is 320 bits, transmitted every 5 ms. PDU type 0 is used.